

REDEYE

NIR Hyperspectral Imaging Camera

The new **RedEye** is a linescan (pushbroom) hyperspectral imaging camera in the near-infrared spectral range that allows the acquisition of real-time data with high spectral and spatial resolution.

This new capability was developed from our vast experience with industrial applications we have delivered in the past decade.

Combining a superior optical design with an advanced 3-D transmission grating technology, high-end electronics, and a fast FPA detector, the **RedEye** camera provides an outstanding performance even under harsh environmental conditions.

Inno-spec's new approach of material characterization allows reliable measurements combining chemical and spatial information. It therefore enables comprehensive analytical applications for the laboratory or for critical online or in-line monitoring in manufacturing processes.

To meet different user demands, multiple software packages are available: from hardware drivers through laboratory software up to fully automated real-time routines for rapid data acquisition, evaluation, and process control.



Features

- **Transmission grating configuration for superior sensitivity**
- **High spatial and spectral resolution**
- **High frame rate**
- **Excellent imaging performance**
- **Robust design**

Technical Specifications:

RedEye 1.7

RedEye 2.2

Spectrograph

Spectral range	typ. 950 to 1700 nm	typ. 1200 to 2200 nm
Dispersion	106 nm/mm	140 nm/mm
Spectral resolution	10 nm (with 80 µm slit)	13 nm (with 80 µm slit)
Spatial resolution	rms spot radius < 35 µm	rms spot radius < 85 µm
Smile	< 60 µm	< 75 µm
Keystone	< 50 µm	< 25 µm
F-number	2.6	2.6
Slit width (default)	80 µm	80 µm

Electronics

Sensor	InGaAs	extended InGaAs
Pixels in full frame	320 x 256	320 x 256
Pixel size	30 x 30 µm	30 x 30 µm
Bit depth	13 bit	14 bit
Frame rate	330 fps (full frame) 4200 fps (4 bands)	330 fps (full frame)
Data interface	Gigabit Ethernet (GigE Vision standard)	Gigabit Ethernet
Camera control	Ethernet	RS 485
Power supply	12 - 36 V DC	24 V DC
Cooling	1-Stage TEC	2-Stage TEC

Operating Conditions

Temperature	-5°C to + 40°C	-5°C to + 40°C
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Mechanics

Dimensions l x w x h	368 x 130 x 145 mm ³	400 x 184 x 180 mm ³
Weight	4.3 kg	10.5 kg
Lens mount	Standard C-mount	Standard C-mount
Protection type	IP65, IP67	

Please note that any specs on the datasheet are subject to change without notice.

Optionally, by replacing the input optics with a multifiber cable, the **RedEye** can be used as a synchronous multipoint, multichannel spectrometer.

As a well-established manufacturer of spectroscopic measurement equipment, **inno-spec** provides optimized solutions for any individual application: from customized OEM components for system suppliers up to fully integrated turnkey solutions for the end-user.

Accessories

- Tungsten halogen light sources in modular sizes
- Different fore optics: 8 mm, 16 mm, 25 mm, 35 mm, 50 mm
- Numerous software packages
- Multifiber bundle (up to 66 channels)

